SPOTLIGHT
Savills Research

UK Rural - June 2022

Agri-food sustainability

savills

Supply chains • Food imports • The cost of production

10%
Proportion of the UK's total GHG emissions from agriculture

35%
of the UK's total GHG emissions comes from our food and drink industry

71%
of the UK's land is used for agricultural production

Increased accountability from supply chains

Commitments to enhanced environmental standards are becoming common

In its mission to feed everyone cheaply, the UK's food system has contributed to huge environmental degradation both at home and overseas. The food and drink industry in the UK now accounts for 35% of our domestic greenhouse gas (GHG) emissions, biodiversity on UK farms has fallen to approximately 30% of what it was in 1970 (Defra 2021), and it has been estimated that agriculture is responsible for 60% of the total nitrogen found in England and Wales' watercourses. Farmers are increasingly required to change their production practices, but remain under financial pressure to sustain yields and output. A lot of attention has been placed on the switch to environmental outcomes in domestic agricultural policy, but in this Spotlight we look at the evolving behaviour of supply chains to the climate and biodiversity crises. We also assess how the situation in Ukraine has exacerbated the need for supply chain sustainability in a financial context.

TAKING ACTION

In a recent Deloitte survey, 30% of consumers claimed to have stopped purchasing certain products because of concerns about their sustainability. However, it has become clear that, as we edge further past our planetary boundaries (see *figure 1*), neither consumer pressure nor voluntary accountability frameworks like the UN's Sustainable Development Goals (SDGs) are sufficient to impact materially on supply chain behaviours.

To address this, more robust environmental disclosure standards have been introduced. All large companies will be required to report on their climate related impact through the Taskforce on Climate Related Financial Disclosures (TCFD) by 2023, with a similar system for nature to follow soon after. Any listed business with exposure to climate or nature risk now needs to disclose that risk. Disclosure means these businesses become less desirable to investors, driving exposed companies to reduce their negative environmental and social impacts. While these regulations are unlikely to apply directly to farming businesses due to their size, many food processors, retailers and some landowners, will be impacted. Food

Planetary boundaries

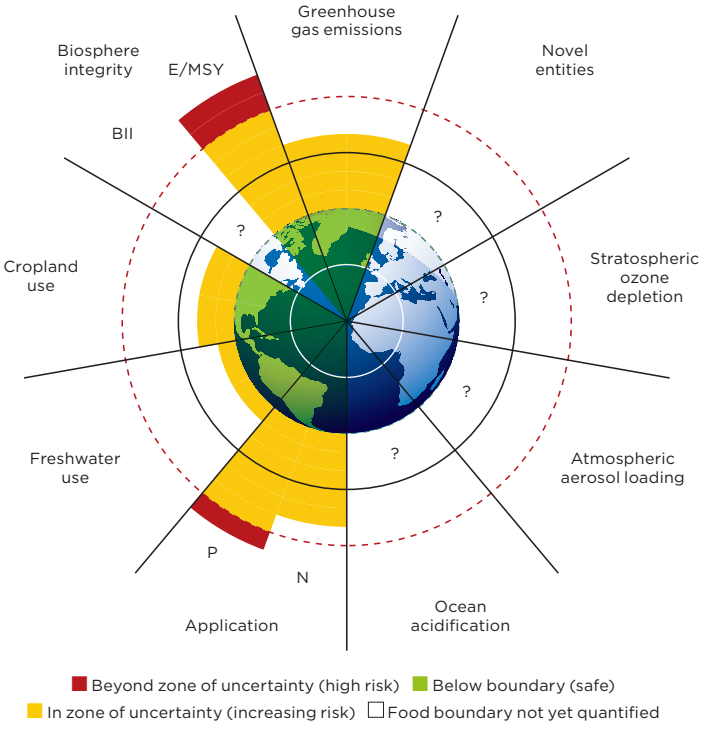


figure 1

Source Steffen et al 2015

Definition of sustainability – meeting the needs of the present without compromising the ability of future generations to meet their own needs.

> **Despite high profile shifts to higher standards, Defra's Farm Practices Survey in 2021 suggested that 33% of farmers do not consider GHGs to be a relevant issue for their farm**

company commitments to enhanced environmental standards are consequently becoming increasingly common, as shown by Nestlé's commitment to source 50% of its key ingredients from regenerative agricultural systems by 2030 and by Morrisons' pledge to be completely supplied by net zero carbon British farms by 2030.

THE FUTURE OF ACCREDITATION

For farmers, the role supply chains currently have in dictating farm practices has been limited. Red Tractor is the dominant assurance scheme with around 50,000 farmers taking part, but it has minimal additional requirements over the regulatory baseline. Enhanced environmental standards, such as RSPCA Freedom Foods, organic certification, and Pasture for Life, have been developed over time to add market value to farmers' produce, implying that shorter supply chains offer higher standards of environmental assurance. In 2021 Tesco announced it would raise its ambition and require all 14,000 of its fresh produce suppliers to achieve LEAF Marque accreditation. Despite high profile shifts to higher standards, Defra's Farm Practices Survey in 2021 suggested that 33% of farmers do not consider GHGs to be a relevant issue for their farm, and only 56% of farmers are currently taking action to reduce their climate impact. So the question is, will supply chains rapidly increasing accountability pressures impact on farmers in the years to come?

30%

of consumers claimed to have stopped purchasing certain products because of concerns about their sustainability

LABELLING

According to Deloitte 46% of customers want more clarity on the origins of products. Retailers are reluctant to tell customers what they should and shouldn't be buying. However, consumers need access to enough product information to make informed purchasing choices. Ecolabels, which provide information on the environmental impact of products, have been proven to positively influence consumers' product purchase behaviour. There are as many as 28 different types of ecolabel in use within the UK, painting a confusing picture for time-pressured shoppers.

Rising expectations

We look at the possible impact on UK farmers

To assess the impact of rising expectations on farmers, Savills Rural Research collated a list of 100 of the largest food companies that purchase UK grown produce and mapped these businesses to the main primary production types in the UK – arable crops, vegetables, eggs, dairy and meat. A desktop study was undertaken to provide an indication of the action being taken around sustainability commitments within the sector. Our research focused on these large food companies and used websites and open source data.

Of the 100 UK food companies identified:

85% mention sustainability on their website

70% take action to reduce waste within their supply chains and operations

62% state they have a sustainability strategy or policy

57% take action to reduce water impact within their supply chains and operations

55% report on their sustainability progress

51% have an emissions reduction target*

37% are signed up to the science-based targets initiative**

34% are explicitly aligned with the Sustainable Development Goals

* However, there is a wide discrepancy in what these targets actually are.
** Targets are considered "science-based" if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.

% of British milk supply that:

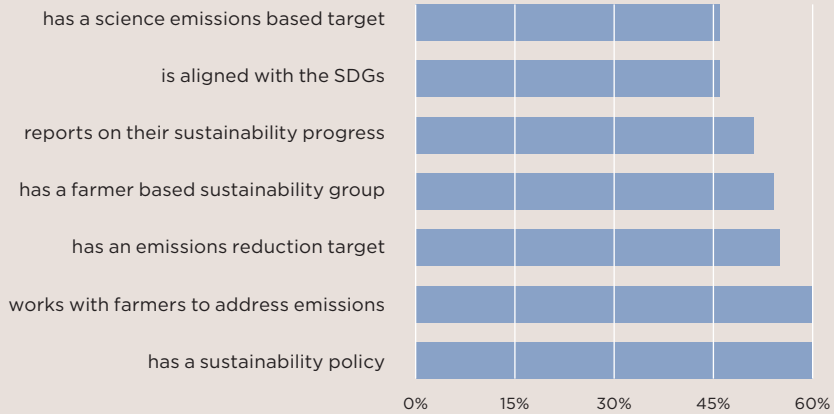


figure 2

Source Savills Research

“62% of the companies we analysed have a sustainability strategy, however only 19% provided specific detail of how they intend to increase sustainability at farm level”

Sustainability commitments

We analyse the progress being made to address farm-based emissions

Analysis by turnover of the 100 largest food businesses suggest that bigger companies have more advanced environmental commitments. 26% of the companies analysed state that they actively support the TCFD. A higher percentage are likely to be reporting in line with TCFD requirements, but may not have published this on their website. Companies with a UK premium listing of their equity shares have been subject to TCFD-aligned reporting since 2021 and this requirement is now being extended to other companies. Increasing requirements for enhanced disclosure play a significant role in changing behaviours. Our research reveals 11 of the largest supermarkets in the UK all have a sustainability strategy that they report on. Ten out of the 11 supermarkets are aligned with the SDGs and they all have emissions reduction targets. 73% of supermarkets we analysed have sustainability groups for farmers and 91% of these supermarkets are engaging in some way to reduce farm-based emissions within their supply chain. The majority (64%) of them provide some detail of how they aim to achieve their sustainability commitments.

The dairy sector arguably has made the greatest progress in addressing environmental impacts as a result of its short value chain, exclusive contracts at farm level and the worldwide focus on the climate impact of ruminants. Our analysis shows that of the total UK milk field, at least 55% by volume is purchased by a processor with a set emissions reduction target and at least 60% of the milk is produced by farmers who are working with their buyer to reduce greenhouse gas emissions. Nestlé and Arla are pioneering methods of working with farmers to reduce environmental impacts, with the key questions being to what extent farmers will be expected to offset actions at farm level and whether farmers will be rewarded fairly for doing so.

FUTURE STRATEGIES

Our research shows the breadth of commitment to sustainable practices within the UK primary production footprint. We found that the more disaggregated the supply chain (the greater number of steps between farmer and end consumer), the harder it is to track sustainability commitments. Despite 62% of the companies we analysed having a sustainability strategy, only 19% provided specific detail of how they intend to increase sustainability at farm level. It is also clear that the lack of transparency between consumers and producers is inhibiting accountability for (and investment in) environmental sustainability. For farmers, the imperative should be to create the information on enhanced environmental practices at farm level, but it seems likely they will wait to be told by supply chains what data they need to provide.

A key question is whether farmers will be properly incentivised to increase the sustainability of their production, or whether it will become a condition of market access to do so. This tension highlights the broader issue of how farmers can retain value and agency within supply chains. There is a cost to creating more sustainable production, and it is not yet clear who will bear that cost.

73%

of supermarkets we analysed have sustainability groups for farmers to reduce farm-based emissions within their supply chain

54%
of the food eaten in the UK is produced domestically

39%
of UK food and drink imports in 2021 (by value) came from just four EU countries

77%
of UK fruit and veg imports come from countries with lower environmental standards

A global food system

We look at the environmental provenance of food imported into the UK

The UK's food footprint isn't just made up of what the country produces domestically. By value the UK is a net importer of food (importing £39.5 billion of food between March 2021 and February 2022 and exporting £13.9 billion – Defra, 2021). As with domestic production, food imported to the UK creates an environmental impact. Rising environmental standards in the UK risks offshoring production to third countries where traceability and standards may not be guaranteed. Savills Rural Research analysed the provenance of imported food that is consumed in the UK and scored the relative environmental impact of each exporting country.

Figure 3 shows the UK import value of four key food commodities: fruit and vegetables, meat, cereals, and dairy and eggs. Together, these commodities account for £24.5 billion worth of imports, or 62% of all food and drink imported into the UK between March 2021 and February 2022. The infographic also illustrates the environmental impact of food production in the countries of origin, considering factors such as land degradation, eutrophication and the risk to water quality from agriculture. Over two thirds (69%, or £16.8 billion) of our food imports originate from nations with worse environmental impact scores than the UK. For fruit and vegetables and cereals, the proportion of imports arriving from nations with worse environmental scores increases to 77%.

TRADE DEALS AND THE ENVIRONMENT

At the heart of the debate is the problem that while the UK can impose standards on its own food producers, the scope to impose them on imports through trade deals is much more limited. The World Trade Organisation (WTO) recognises limited legitimate barriers to trade, mostly based on food safety and labour standards. These standards don't address the way the product is created, such as its environmental impact.

The government's advisory body for trade stressed in its July 2021 Green Trade Report that the UK is well placed to take a leading role internationally in bringing trade and environmental agendas together, setting a precedent for the way in which trade deals can target environmental impact. While this may be encouraging, environmental equivalence won't stop UK producers being undercut by overseas producers. The fundamentals of nature mean agricultural productivity can be higher elsewhere due to climatic differences and our higher employment standards mean developing countries in particular have a structural labour cost advantage.

Imports to the UK by volume and country, corresponding to their environmental impact

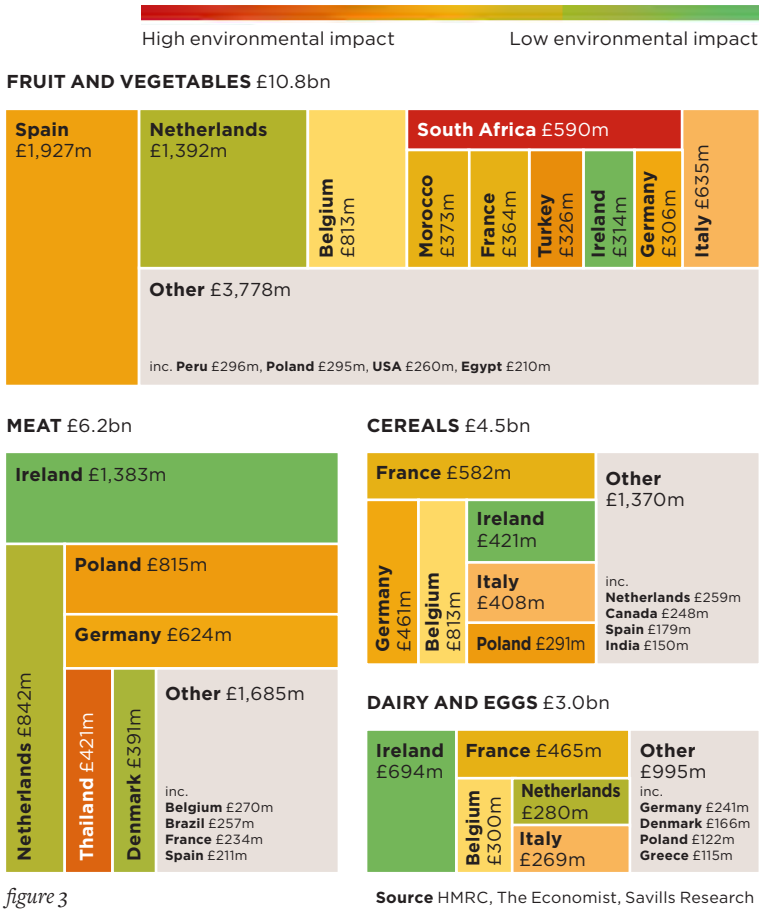


figure 3

Source HMRC, The Economist, Savills Research

The UK produces:

54%
of the fresh vegetables it eats

71%
of the potatoes it eats

16%
of the fresh fruit it eats

COST OF IMPORTS

The true environmental cost of imports is difficult to precisely determine due to the "Rotterdam effect", whereby non-EU exports to the UK through the EU are recorded as originating in the first port of entry rather than their true nation of origin. The effect is named after the port of Rotterdam, one of the busiest in the world, however the principle will occur through other ports.

WELFARE VS ENVIRONMENTAL SUSTAINABILITY

More intensive livestock systems require a shorter finishing time for animals compared to more extensive pasture-based systems, meaning the environmental impact per unit of product can be lower even though welfare standards can be higher in extensive systems. There is a growing consumer preference for high welfare meat, however, consumers must remember quality comes over quantity, and welfare may come at a cost to both price and environmental sustainability.

1.6m
hectares of wheat grown in England during 2021

52%
increase in cost of wheat production 2021-2023

£22
introductory payment per hectare for the Sustainable Farming Incentive soils standard

The cost of farming

With BPS being phased out and dramatically rising costs, what are the prospects for the 2023 UK harvest?

The cost and profit of growing a crop varies year to year and this variability presents a significant risk to farming economies due to the narrow margins on which they operate – and therefore to food security. As the Basic Payment Scheme (BPS) is phased out in England, farmers will be missing the annual payment that has served to underwrite the inherent risk in production. There is uncertainty as to whether farmers in Scotland will experience BPS cuts before 2026, but it is likely farmers will have to jump through more hoops to receive payments. In England, the agricultural transition has been creating a gradual move to alternative risk management measures. The war in Ukraine has rapidly accelerated the cost problem for farmers and highlighted for supply chains the risk of reliance on commodity markets. As costs rise dramatically because of the energy crisis, many farmers will be concerned about the impact on their margins and financial security. What are the prospects for the UK harvest in 2023?

BUDGETING FOR 2023

We compared the costs of the 2021 winter wheat crop with a budget for autumn cultivations in 2022 for harvest 2023. The results showed the total cost of production has increased by over 50% compared to 2021, with most of this increase coming from the rising cost of fertilisers. Ammonium nitrate fertiliser peaked at around £1,000 per tonne in early 2022 but has fallen back to below £650 per tonne in May, which is still well over its 10-year average. The agricultural buying group AF reported that agricultural inflation increased by 24% in the six months to March 2022.

In mid May 2022, futures prices for November 2023 were over £280 per tonne. Our modelling used a more conservative estimate of £260 per tonne, and predicted margins increase from 2021 levels by 10%. The significant increase in upfront costs in 2023 means that despite an overall increase in margins in cash terms, the return on capital is lower in 2023 (41%) than in 2021 (57%) – see figures 5 and 6. The extra working capital needed to fund the rise in input costs for 2023 is substantial. Narrowing margins and increasing costs will be compounded by the further loss of BPS and may contribute to risk-averse cropping decisions this autumn.

Wheat has an advantage over other crops, in particular fresh produce, as it is globally traded, meaning the price is influenced by the global supply and demand dynamic. Agricultural products that aren't traded as global commodities such as fresh vegetables and meat are being significantly impacted by increasing input prices yet this impact hasn't fed through

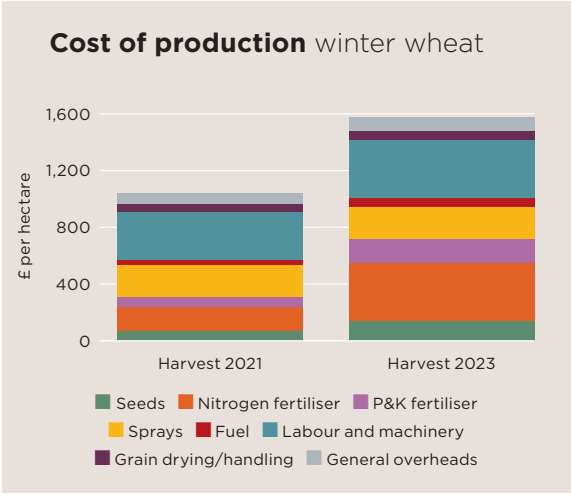
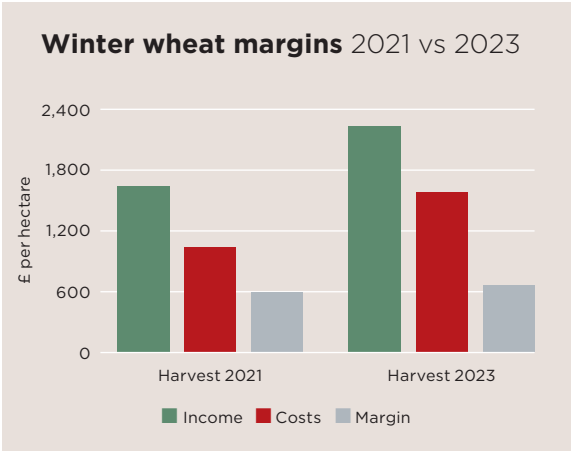


figure 5

Source Savills Research



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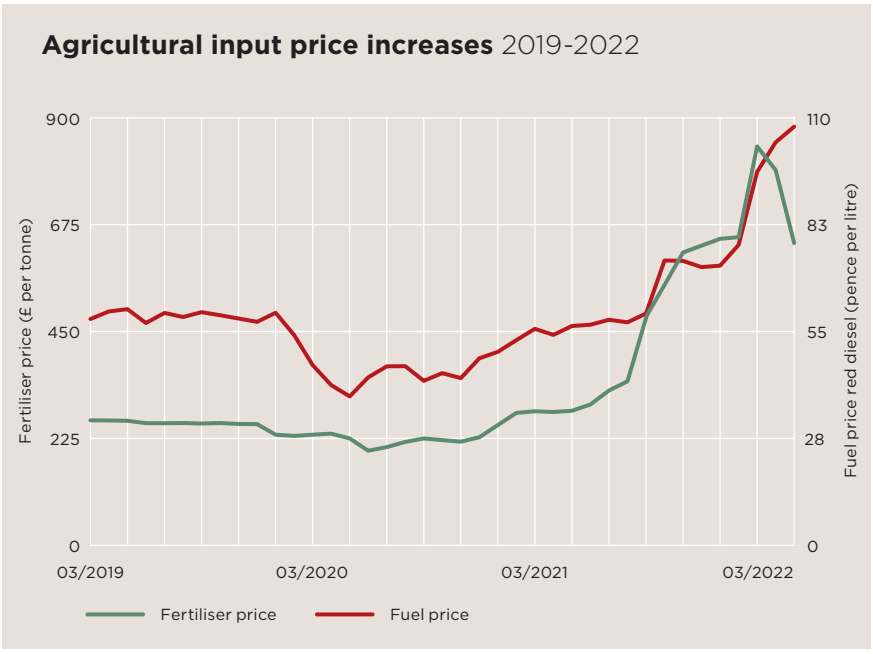

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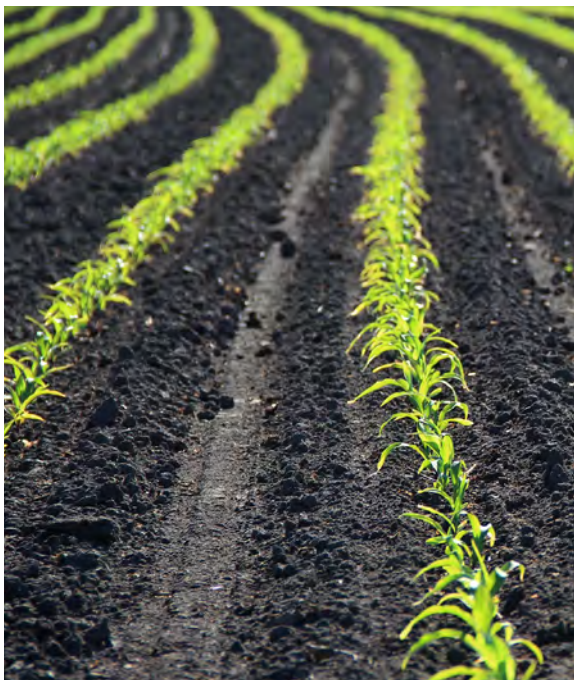

> **Food producers and consumers may now be encouraged to adopt approaches to sustainable food production that they have previously had the privilege to eschew**

to an increase in output values, as these prices are set locally. This is leaving these producers in a financially precarious position.

Farmers who choose to crop will need to mitigate their risk, and one way of doing this is through achieving the economically optimum application of nitrogen, rather than the agronomic optimum. Figure 7 demonstrates the yield and economic impact of varying fertiliser application rates. Farmers looking to reduce nitrogen costs will be reassured that margins are preserved at low application rates in a high wheat/high cost environment. Still, it is clear supply chains both upstream and downstream of farming need to step into the breach, to shore up farmers' confidence that the risk of production is worthwhile, and so ensure commodities are available for trade.

ECONOMISING INPUTS

Retailers and larger first purchasers of farm produce are increasingly interested in environmental sustainability, therefore, it may be that their urgent interest to secure supply from UK farmers comes with strings attached. Farmers who have already started to measure and ameliorate their environmental impact will be at an advantage in proving their business resilience.

Our anecdotal research of Savills rural consultants suggests an even split between those who think the UK wheat area will increase as a result of the Ukraine crisis and those who think it will decrease. Bearing all this in mind, it may well be bank managers who have the biggest role in determining which of these views will be correct.

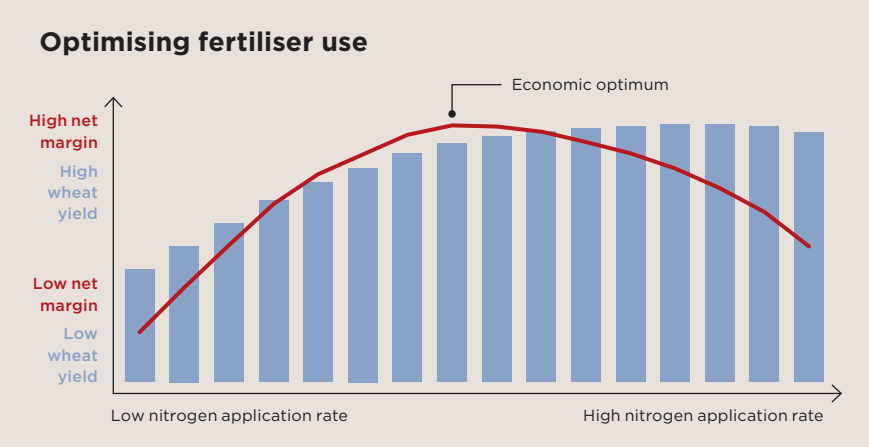

figure 7

Source Savills Research

INFLUENCING FARMER BEHAVIOUR

Environmental delivery comes at a cost. While agricultural policy budgets can go some way to make up the shortfall in farmers' management costs, supply chains have their role to play too. Longer term and fairer contracts, alongside pricing strategies to incentivise positive actions, will help farmers have confidence in business viability, as indicated by Arla Foods' recent commitment to pay dairy farmers more based on their commitment to undertake carbon mitigation activities. Morrisons' partnership in the School of Sustainable Farming at Harper Adams University shows how investment in research and skills has a big part to play. The government signalled that it was prepared to take a bigger role in regulating supply chain behaviours in the Agriculture Act, including concepts of fair dealing and encouraging Producer Organisations. It remains to be seen what legislation it will bring forward, or whether the private sector will be left to its own devices in developing more sustainable supply chains.

24%

reported increase in agricultural inflation in the six months to March 2022

Will a food crisis force innovation?

If crisis is the mother of innovation, what could we expect?

Previous generations have responded to food security concerns by increasing production. Technological investment has focused on high input, high output models and unit efficiency rather than system efficiency.

As we face a collective resource crunch caused by conflict in the breadbasket of the world, it is important we don't make the mistakes of the past.

Regenerative systems certainly have a role to play in maximising farm system efficiency and resilience, but food producers and consumers may now be encouraged to adopt approaches to sustainable food production that they have previously had the privilege to eschew.

Here are three food-tech innovations where conflict may accelerate adoption of more sustainable solutions:

1 *Controlled Environment Agriculture* – Farming stalwarts suggest digging up land to grow food, much as we did during World War Two. Outdoor growing seasons are short and slow, but controlled environment systems are unlimited in their output. Greenhouses and tower systems could bring vital nutrition close to consumers.
■ *Needs:* ££, planning, markets

2 *Nitrogen-fixing wheat* – Plant breeders have made great progress with precision breeding techniques to accelerate natural evolution, but some innovations rely on advances that are deemed a step too far. GM is one of them. Scientists have been working on introducing the nitrogen-fixing abilities of legumes into common wheat varieties, but the GM techniques remain controversial. Wheat that doesn't require artificial nitrogen would solve resource pressures but remains decades from realisation.
■ *Needs:* legislation, ££, science

3 *Waste as feed* – Every 1kg of food waste releases 2.5kg of CO_2, particularly when it ends up in landfill. Traditionally, food waste was recycled as feed for pigs and chickens, but biosecurity problems ensued with catering waste. Insects could solve the recycling issue by repurposing post-consumer waste into biosecure feed for animals, with the twin benefit of avoiding using feed sources that could be suitable for human consumption and reducing greenhouse gas emissions.
■ *Needs:* legislation, partnerships, ££

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